



# Wildlife and Habitat Risk Map for Land - Based Wind Energy Projects

## Explanation of Colors

**Black:** Federally-owned lands. Development of wind energy projects on these lands would require federal authorization. A wind project developer is encouraged to coordinate with federal land managers early in the assessment process to determine the potential risk to species or habitats and any needed authorizations for projects proposed on or near these lands.

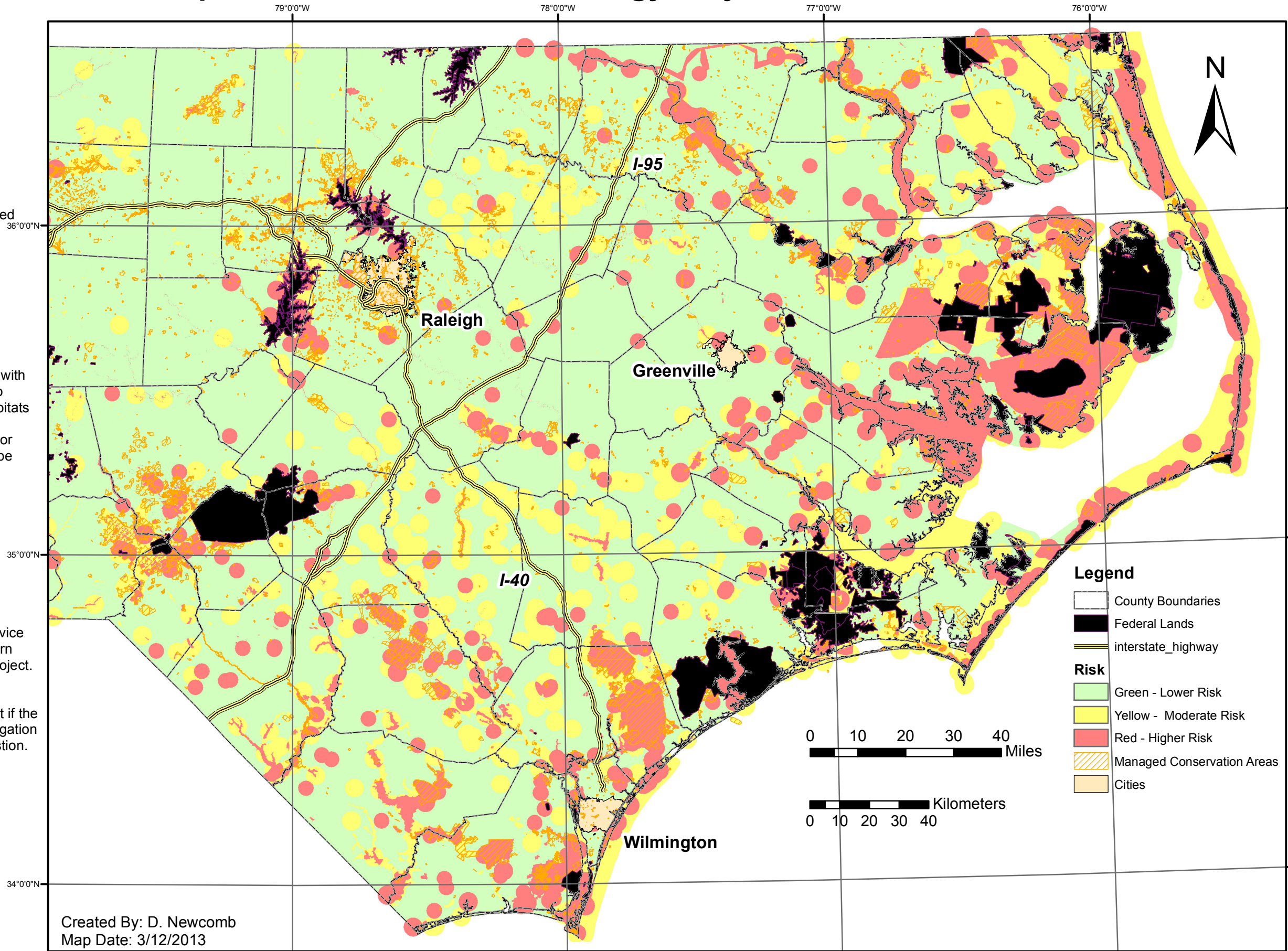
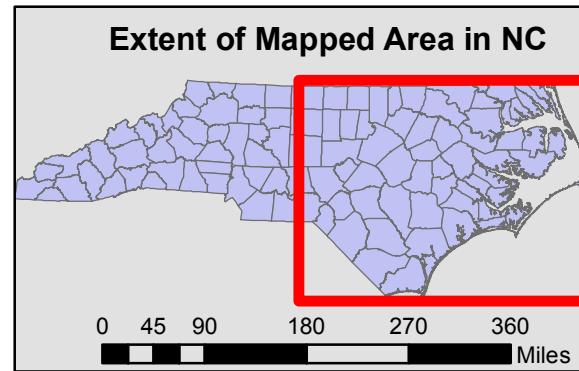
**Orange Hatch:** Managed conservation areas, administered by Federal, State or other entities. A wind project developer is encouraged to coordinate with government, non-governmental, or private landowners early in the evaluation process (i.e. Tier 1 or 2 of the Service's 2012 Land-Based Wind Energy Guidelines) to determine the potential risk to species or habitats from a proposed wind project proposed near these lands.

**Green:** Areas assigned a lower environmental risk associated with proposed wind energy projects, or areas with no data. Tier 1 and 2 evaluations should be conducted to ensure that no known species of concern or sensitive habitats will be impacted by the proposed project. If Tier 1 or 2 evaluations reveal potential impacts to sensitive habitats or species of concern, further evaluations and studies may be needed.

**Yellow:** Areas assigned a moderate environmental risk associated with proposed wind energy projects. Tier 4 evaluations will likely be needed to adequately characterize the potential impacts of the project. Depending on the results of the Tier 3 (Field studies) and 4 (Post-Construction Studies) evaluations,

**Red:** Areas assigned the highest environmental risk associated with proposed wind energy projects. The Service has data indicating sensitive habitats or species of concern that would likely be adversely impacted by a proposed project. Tiers 1-4 evaluations are recommended in these areas.

Note: Tier 5 studies may be recommended for any project if the anticipated levels of take are exceeded, to verify that mitigation measures were successful, or to answer a research question.



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How to Read This Map

This pilot mapping project, produced by the U.S. Fish and Wildlife Service (Service) in collaboration with staff from the North Carolina Wildlife Resources Commission (NCWRC), provides general information on the potential risk to species of concern and sensitive habitats from proposed wind energy projects in the coastal plain of North Carolina. The map is intended to assist wind energy developers with appropriate siting of proposed wind energy projects that are subject to the Service’s 2012 Land-Based Wind Energy Guidelines, particularly during the Tier 1(Preliminary Site Evaluation) and Tier 2 (Site Characterization) stages of site evaluation. It is intended to be used as a general guidance, and should not be used for final decision-making. According to the Land-Based Wind Energy Guidelines, environmental risks include direct impacts (e.g. collisions with turbines and associated infrastructure, loss or degradation of habitat from turbines and infrastructure, fragmentation of habitat, displacement or behavioral changes), and indirect impacts (e.g. increased predator populations). The colors on the map and the assigned risk values represent the Service’s estimation of the relative environmental risk to species of concern and sensitive habitats within an area. Regardless of the environmental risk value associated with a particular area, wind energy project developers should coordinate with the Service and other appropriate Federal and state agencies, and follow the Land-Based Wind Energy Guidelines to inform the siting and development of any proposed wind energy project.

The boundaries of various layers on the map do not necessarily reflect the mobility of a species of concern, or the potential for interaction with a wind project. In all cases, Tier 1 and 2 studies are recommended, to ensure that no known species of concern or sensitive habitats will be impacted by the proposed project. If Tier 1 or 2 evaluations reveal potential impacts to sensitive habitats or species of concern, further evaluations and studies may be needed.

For the purpose of this pilot project, species of concern include: rare/threatened/endangered species, migratory birds, bats, and bald and golden eagles. Other areas identified as high environmental risk include certain North Carolina Significant Natural Heritage Areas (SNHA), and areas documented as having high concentrations of migratory waterfowl.

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